

CONTRACT CHANGE ORDER MEMORANDUM

DATE: 10/9/2014 Page 1 of 2

TO: Tony Anziano, Program Manager /			FILE: E.A. 04 - 0120F4	
FROM: Darryl Schram, Senior TE			CO-RTE-PM SF-80-13.2/13.9	
FED. NO. No				
CCO#: 191	SUPPLEMENT#: 2	Category Code: CBPC	CONTINGENCY BALANCE (incl. this change) \$26,138,711.86	
COST: \$204,561.00 INCREASE <input checked="" type="checkbox"/> DECREASE <input type="checkbox"/>			HEADQUARTERS APPROVAL REQUIRED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
SUPPLEMENTAL FUNDS PROVIDED: \$0.00			IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CCO DESCRIPTION: Additional Misc. Electrical Changes			PROJECT DESCRIPTION: CONSTRUCT SELF-ANCHORED SUSPENSION BRIDGE	
Original Contract Time: 2490 Day(s)	Time Adj. This Change: 0 Day(s)	Previously Approved CCO Time Adjustments: 630 Day(s)	Percentage Time Adjusted: (including this change) 25 %	Total # of Unreconciled Deferred Time CCO(s): (including this change) 2

THIS CHANGE ORDER PROVIDES FOR:

Revising miscellaneous electrical items to resolve conflicts and adjust to as-built conditions, including:

- 1) Extend the grounding conductor on the East side of the Pier E2 cap.
- 2) Furnish Type 316L stainless steel wireways in lieu of Type 304 for installation on the Tower, cable, and Orthotropic Box Girder (OBG).
- 3) Provide credit for penetrations, pipe sleeves, and associated pull boxes, conduits, and wires for future light pipe conduit at Panel Points (PP) 118 and 120 that will not be installed.
- 4) Modify strong motion detection system sensor enclosure mounting at PP 127.5.
- 5) Modify Utility Panel (UP) 210 rack and attached unistrut.
- 6) Revise slip joint for belvedere lighting.
- 7) Modify electrical at Hinge A.
- 8) Revise conduit and conduit supports between Tower shafts and Tower structural elements.
- 9) Revise conduit size and conduit support for the ground system on the D face of the NW Tower quadrant.
- 10) Modify the electrical raceway at Pier E2 Cap Beam.
- 11) Provide a credit to eliminate verification and testing for ground resistance on the Pier W2 existing ground system.
- 12) Modify cables for strong motion recorders.
- 13) Install additional barrier cover plate penetrations for the PP 119 light poles.
- 14) Revise Tower elevator telephone cable termination.
- 15) Furnish and install 30A receptacles and plugs in lieu of 20A for the traveler receptacles.
- 16) Repair paint damaged by strong motion detector cabinet support modifications, by revisions to the slip joint on the belvedere lights, and by conduit and conduit support revisions between the Tower shafts, in accordance with Special Provisions Section 10-1.69 "Clean and Paint Structural Steel."

Contract Change Order (CCO) 191 S0 "Misc. Electrical Changes" and CCO 191 S1 "Additional Misc. Electrical Changes" resolved electrical conflicts that were identified through the RFI and submittal review process through December 2012. This change order supplement will continue to modify minor electrical items as conflicts are identified through August 2013.

- 1) CCO 329 "Pier E2 Shear Key Concrete" installed additional concrete for the Pier E2 shear keys saddle anchorage. The grounding conductor will be extended to the edge of the new concrete limits.
- 2) CCO 191 S0 changed NEMA Type 4x wireways to 316L stainless steel to provide better resistance for corrosion and compensated for the additional material cost for wireways installed on the service platforms. This change order will compensate for the additional material cost for 316L stainless steel wireways installed on the Tower, cable, and OBG.
- 3) CCO 187 "MEP-Structural Interferences" added penetrations and pipe sleeves for future light pipe conduits at PP 118 and 120, however this change order will eliminate these items since a design or decision on light pipes for the bridge is not under development.
- 4) The sensor enclosure mount will be revised to resolve conflict with the OBG floorbeam web plate.
- 5) UP-210 mount will be revised to resolve conflict with the access door doubler plate at Tower elevation 53 M.
- 6) CCO 43 S1 "State Furnished Light Poles" eliminated furnishing of the belvedere light poles from the SAS contract so the Bay Area Toll Authority (BATA) could procure poles for the entire bridge from the same fabricator. The slip joint connection will be revised to match up with the as-built poles fabricated under the BATA contract.
- 7) Conduit supports, cable tray supports, cable tray support hangers, and routing to cable trays will be revised at Hinge A to accommodate as-built conditions on the Skyway.

CONTRACT CHANGE ORDER MEMORANDUM

EA: 0120F4 CCO: 191 - 2

DATE: 10/9/2014


Page 2 of 2

- 8) Conduits routing between the Tower shafts will be revised to ensure the conduit can endure seismic displacement.
- 9) Larger conduit is necessary to enclose the Tower grounding system.
- 10) CCO 329 installed additional concrete for the Pier E2 shear keys saddle anchorage which will need additional conduit, fittings, pull boxes, and struts for conduit support due to bends created by the concrete jacket wall.
- 11) The verification and testing requirement on the existing ground system that was added by CCO 75 "Electrical Grounding" is unnecessary since sufficient grounding electrodes (ground rods and bare copper conductors) have been installed under CCO 75 to provide grounding for conductors connected to it without needing the existing system capacity.
- 12) The Integrated Services Digital Network (ISDN) cables to the strong motion recorders are obsolete. The #2910-10 ISDN cable will be used to provide Plain Old Telephone Service (POTS) to the seismic recorder on service platform 5, while the seismic recorder on the Tower will be available as a spare and not hooked up to POTS.
- 13) Penetrations will be made for the conduit routing that was revised in CCO 191 S1.
- 14) The telephone cable will be terminated directly to the respective terminals where the conductors from the 50-pair cable are terminated in order to eliminate the need to install internal jumper wires.
- 15) The 20A traveler receptacles required by CCO 137 "Traveler Navigation Lights" are unsuitable for outdoor use therefore 30A receptacles and plugs will be used instead.

The total cost of this change order is \$204,561.00 lump sum, which can be financed from the contingency fund. The cumulative total of CCO 191 S0, S1, and S2 is \$745,530.00. A detailed cost analysis is on file.

No time adjustment is warranted as this change order does not affect the controlling operation.

This change order has concurrence from William Casey (Supervising TE), Rich Foley (HQ Oversight), Lina Ellis (Maintenance), and Jing Chen (District Design).

CONCURRED BY:			ESTIMATE OF COST		
Construction Engineer:	William Casey, Sup TE	Date 9/26/13	THIS REQUEST		TOTAL TO DATE
Bridge Engineer:		Date	ITEMS	\$0.00	\$0.00
Project Engineer:	District Design, Jing Chen	Date 1/29/14	FORCE ACCOUNT	\$0.00	\$0.00
Project Manager:		Date	AGREED PRICE	\$204,561.00	\$295,744.00
FHWA Rep.:		Date	ADJUSTMENT	\$0.00	\$449,786.00
Environmental:		Date	TOTAL	\$204,561.00	\$745,530.00
Other (specify):	HQ, Rich Foley	Date 9/27/13	FEDERAL PARTICIPATION		
Other (specify):	Struct. Maint, Lina Ellis	Date 1/20/14	<input type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input checked="" type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (MAINTENANCE) <input type="checkbox"/> NON-PARTICIPATING		
District Prior Approval By:		Date	FEDERAL SEGREGATION (if more than one Funding Source or P.I.P. type)		
HQ (Issue Approve) By:		Date	<input type="checkbox"/> CCO FUNDED PER CONTRACT <input type="checkbox"/> CCO FUNDED AS FOLLOWS		
Resident Engineer's Signature:		Date	FEDERAL FUNDING SOURCE PERCENT		
 10-14-14			_____		

